Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Petition for Rulemaking to Allow the MA3 All-Digital Mode of HD Radio for AM Stations	)	RM-11836
	)	
Revitalization of the AM Radio Service	)	MB Docket No. 13-249
	)	

RESPONSE OF XPERI CORPORATION

Xperi Corporation ("Xperi") submits this response pursuant to Section 1.405 of the Commission's Rules in support of the above-captioned Petition for Rulemaking (the "Petition") filed by Bryan Broadcasting Corporation ("BBC") to initiate a proceeding to authorize a voluntary transition to the MA3 all-digital mode of HD Radio™ operation for AM stations. The Commission should promptly issue a Notice of Proposed Rulemaking to facilitate the transition to all-digital broadcast operations in the AM band, simplify the application and approval process, and establish a framework for the eventual transition to an all-digital format for FM stations.

I. BACKGROUND

Xperi is the developer and licensor of HD Radio technology,[1] which utilizes digital modulation techniques to provide radio stations the ability to transmit many types of content: audio, text, images, traffic messages, and generic data applications. HD Radio broadcasting provides many benefits over traditional analog radio, including crystal clear, static free sound, multicasting, enhanced metadata (including artist, song title, and album information), traffic

[1] In 2015, DTS Inc. acquired iBiquity Digital Corporation, the original developer and licensor of HD Radio technology. In 2016, Xperi acquired DTS Inc., which continues to operate as a wholly-owned subsidiary of Xperi.

services, and enhanced digital emergency alerts. Using Xperi's in-band on-channel ("IBOC") digital broadcast system, AM and FM stations are able to broadcast a hybrid digital signal without sacrificing their existing analog capabilities.

To date, HD Radio technology has been successfully deployed across more than 2,300 radio stations in the United States covering all of the top 100 Nielsen Metros and more than 90% of the U.S. population. Furthermore, there are currently 327 stations in 85 markets transmitting digital emergency alert notifications and utilizing the HD Radio service's enhanced public safety capabilities. Consumer adoption of HD Radio broadcasting continues to expand at a rapid pace. There are now more than 55 million HD Radio-equipped cars on the road in the U.S. – a number that is growing every day. All major auto brands offer factory-installed HD Radio receivers, with HD Radio technology a standard feature in over 170 vehicle models.

II. THE FCC SHOULD PROMPTLY ISSUE A NOTICE OF PROPOSED RULEMAKING TO PERMIT A VOLUNTARY TRANSITION TO ALL-DIGITAL AM BROADCASTING

Xperi supports BBC's Petition advocating the adoption of the MA3 service mode for all-digital AM broadcast transmissions. Xperi further encourages the FCC to allow for a voluntary transition to all-digital broadcast operations in the AM band and to enact procedures to simplify the application and approval process.

HD Radio technology is a mature technology that Xperi and its predecessors have developed and commercialized since 2002. Although the focus of Xperi and the broadcast industry in recent years has been on the deployment of radio stations operating in the hybrid analog/digital mode, all-digital AM and FM operations have been a part of the HD Radio system definition since the earliest proposals by USA Digital Radio and iBiquity Digital.[2] Indeed, the

[2] *See, e.g.*, Consolidated Comments of USA Digital Radio, L.P., *Amendment of Part 73 of the Rules and Regulations to Establish Event Broadcast Stations; Petition for a Microstation Radio*

International Telecommunication Union recommended in 2001 the use of a transitional simulcast service "in addition to digital-only solutions."[3]

The MA3 service mode for all-digital AM broadcasting is an accepted industry standard documented in NRSC-5 definitions for the IBOC system.[4] It is also a proven technology, as demonstrated in tests conducted with NAB Labs from December 2012 to October 2014 on the following stations: WBCN, Charlotte, NC; WNCT, Greenville, NC; WBT, Charlotte, NC; WD2XXM, Frederick, MD; KTUC, Tucson, AZ; WDGY, Hudson, WI; WSWW, Charleston, WV; KKXA, Snohomish, WA; and KRKO, Everett, WA.[5] Test reports have documented MA3 day-time reception beyond the 0.5mV/m contour and night-time reception beyond the NIF for the participating test stations demonstrating the resilience of the digital broadcast to environmental noise effects.[6]

The MA3 service mode greatly expands the capability of AM broadcasters to offer better quality audio and new data services through a robust transmission service. An all-digital AM service will enable stereo audio services for AM broadcasters, which will allow them to provide

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Broadcasting Service; Proposal for Creation of the Low Power FM (LPFM) Broadcast Service, RM Nos. 9246, 9208, 9242 (Apr. 27, 1998) (describing USADR's role in developing digital AM and FM broadcasting systems); Letter from David R. Siddall to Magalie Roman Salas, MM Docket No. 99-325 (Nov. 1, 2000) (demonstrating iBiquity all-digital AM and FM systems).

[3] *See* International Telecommunication Union *System for Digital Sound Broadcasting in the Broadcasting Bands Below 30 MHz*, ITU-R BS.1514 (2001), *available at* https://www.itu.int/dms_pubrec/itu-r/rec/bs/R-REC-BS.1514-0-200104-S!!PDF-E.pdf

[4] *See* National Radio Systems Committee, *NRSC-5-D Standard and Reference Documents*, https://www.nrscstandards.org/standards-and-guidelines/documents/standards/nrsc-5-d/nrsc-5-d.asp.

[5] *See* NAB Pilot, *All Digital AM Radio Testing*, https://nabpilot.org/work/projects/all-digital-am-radio-testing/.

[6] *See, e.g.*, Letter from E. Glynn Walden to Marlene H. Dortch, Experimental Permit - 20121018ACL (June 3, 2013), *available at* https://licensing.fcc.gov/cgi-bin/prod/cdbs/forms/prod/getimportletter_exh.cgi?import_letter_id=41727

audio programming that currently is limited by environmental noise. The digital broadcast capability will also allow radio stations to transmit enhanced metadata coincident with the audio program providing program title, artist, and other related metadata in addition to transmitting a station's logo for branding and album cover images. These additional data functions are a key component of digital radio's enhanced emergency alerting capability, whereby AM broadcasters can send text notifications and supportive images (e.g., photos of missing persons or emergency evacuation maps) associated with an alert.

Deployment and adoption of an all-digital AM broadcast operation can be quickly achieved and will result in instantaneous benefit to broadcasters and consumers. Transmitter equipment sold by several manufacturers are currently compatible with the MA3 operational mode. Furthermore, HD Radio receivers are designed for forward compatibility with all-digital AM and FM signal transmission. Put another way, over 50 Million HD Radio receivers currently in the marketplace will support the AM all-digital functionality, including the digital audio program and accompanying program service data, from day 1.

All told, the time is ripe for the Commission to take the next step both in radio broadcasting and in its effort to revitalize the AM band by adopting rules to facilitate and hasten the inevitable transition to an all-digital future.

III. CONCLUSION

For the foregoing reasons, Xperi supports BBC's Petition and encourages the Commission to promptly issue a Notice of Proposed Rulemaking to facilitate the transition to all-digital broadcast operations in the AM band, simplify the application and approval process, and establish a framework for the eventual transition to an all-digital format for FM stations. Xperi looks forward to the opportunity to continue working with the Commission on this matter.

Respectfully submitted,

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